AMENDMENTS TO THE SPECIFICATION

Following the title, please insert the following paragraphs:

Cross-Reference to Prior Application

This is a U.S. National Phase application under 35 U.S.C. §371 of International Patent Application No. PCT/JP2004/006427 filed on May 6, 2004. The International Application was published in Japanese on December 9, 2004 as WO 2004/106597 A1 under PCT Article 21(2).

Please replace the paragraph beginning on page 1, line 18, with the following rewritten paragraph:

-- With the VGF method, it has been reported that because crystals are grown under a low temperature gradient, InP crystals with low dislocation density can be grown. For example, in ~~13th~~ 10th International Conference on Indium Phosphide and Related Materials, Post Deadline Papers, Tsukuba, Ibaraki (1998) 15-16, there is reporting of an Fe-doped InP crystal of 3 inches diameter. In this paper, it is reported that the etch pit density (EPD) of (100) wafer was 3,000 cm^{-2}. This etch pit density corresponds to the dislocation density of the crystal. In this paper, the growth orientation of the crystal is not shown. In Technical Digest of GaAs IC Symposium, Monterey, (2002) 147-150, with a commercial Fe-doped (100) InP wafer of 4 inches diameter, there was a large gradient in the etch pit density and photoluminescence (PL) intensity on the wafer, and Fe concentrations changed approximately two-fold. From this, the growth orientation of the commercial VGF crystal was presumed to be <111>. In addition, when Fe-doped InP crystals of 4 inches diameter are grown by the vertical boat method using a <100> seed, it has been reported that a (100) wafer with a dislocation density average value of 11,000 cm^{-2} was obtained. --

Please replace the paragraph beginning on page 2, line 12, with the following rewritten paragraph:

-- In addition, in the ~~13th~~ 10th International Conference on Indium Phosphide and related Materials, Post Deadline Papers, Tsukuba, Ibaraki (1998) 1-2, Japanese Journal of Applied Physics, 38 (1999) 977-980, there is reporting of an InP crystal of 100 mm diameter which was grown in the <100> orientation by VGF method. Furthermore, in the ~~14th~~ 11th International Conference on Indium Phosphide and Related Materials, Davos, Switzerland, (1999) 249-254, InP crystals of 100 mm diameter grown in the <100> orientation by VGF method were heat treated in an iron phosphide atmosphere to obtain Fe-doped (100) InP wafers of 100 mm diameter. --

Please replace the paragraph beginning on page 3, line 8, with the following rewritten paragraph:

-- As a result, in Journal of Crystal Growth ~~95~~ 94 (1989) 109-114, there is reported a method of growth in the<111> orientation in which twins are not readily generated. However, as described in Technical Digest of GaAs IC Symposium, Monterey (2002) 147-150, in order to use the usual (100) wafers, the (100) wafer must be sliced at an angle of 54.7 degrees with respect to the growth direction. As a result, there results a large gradient for the dopant concentration on the wafer. Commercial Fe-doped (100) InP wafers of 4 inches diameter (approximately 100 mm) have been reported to have approximately two-fold changes in Fe concentration on a wafer. When there is such a large change in Fe concentration, there are also large changes in electrical properties on the wafer. As a result, when this is used for optoelectronic devices such as semiconductor lasers for optical commumication, photodetectors, and the like, and for electronic devices such as transistors and the like, the performance of the device is not constant on the wafer. --

Please replace the paragraph beginning on page 3, line 22, with the following rewritten paragraph:

-- On the other hand, as described in Japanese Laid-Open Patent Number 11-302094, in order to prevent the generation of twins, the crystal growth rate at a tapered part is preferably 20 mm/hr or greater, and the slope angle for the tapered part of the inverse-conical crucible is 80 degrees or greater and less than 90 degrees with respect to the crystal central axis. Normally, the dopant is placed together with the raw material in the crucible, and crystal growth is conducted. However, if the growth speed is too fast, constitutional supercooling occurs, which results in polycrystallization. As described in ~~14th~~ 11th International Conference on Indium Phosphide and Related Materials, Davos, Switzerland, (1999) 249-254, a monocrystal in which dopant is not added is grown, and after making this into a wafer, heat treatment is conducted under an iron phosphide atmosphere in order to obtain an Fe-doped InP substrate. However, with this method in which dopant is diffused from the atmosphere, this may result in dopant concentrations higher in areas closer to the wafer surface. As a result, when using for optoelectronic devices such as semiconductor lasers for optical communication, photodetectors, and the like, and for electronic devices such as transistors and the like, the device performance may not be stable. --